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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/699,844	08/20/96	DETTMER	D 18799.79(TT1

LM02/1229

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EXAMINER	
SAINT SURIN,J	
ART UNIT	**PAPER NUMBER**
2747	16

DATE MAILED: 12/29/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

SEE ATTACHMENT !

Office Action Summary	Application No. 08/699,844	Applicant(s) David R. Dettmer
	Examiner Jacques M. Saint-Surin	Group Art Unit 2747

☒ Responsive to communication(s) filed on *Sep 28, 1998*.

☒ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *3* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1, 2, 4, 8, 9, and 20-37* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1, 2, 4, 8, 9, and 20-37* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). *13*

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Response to Amendment

1. This Office action is responsive to the amendment of 9/28/98.

Claim Rejections - 35 USC § 112

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "A near full duplex portable handset speakerphone".

3. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 2, the limitation " a near full duplex portable handset speakerphone" is not understood because the examiner cannot establish the differences between a full duplex portable handset and the claimed near full duplex portable handset. Clarification and correction are required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-2, 4, 7-9 and 20-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Odhams (GB 2174578A) in view of Karnowski et al. (US Patent 5,768,364).

Regarding claim 1, Odhams shows in Fig. 1 a duplex portable handset speakerphone (loudspeaking telephone), that comprises: a microprocessor (microprocessor M11); a hands-free receive register (hands-free microphone 1) coupled to the microprocessor M11; a hands-free transmit register (loudspeaker 9) coupled to the microprocessor M11; a memory circuit having an algorithm executable by the microprocessor for operating the speakerphone (microprocessor inherently includes a memory circuit with a look up table for executing the algorithm); a first analog-to-digital converter (A/DC transmit C10) coupled to the hands-free microphone 1; a second analog-to-digital converter A/DC receive C12; a first programmable digital attenuator (attenuator transmit AT7) in a speech path and coupled to the microprocessor M11 and to a speaker (loudspeaker 9); a second

programmable digital attenuator (attenuator transmit AT3) in another speech path and coupled to the microprocessor M11 and to a microphone 1. However, Odhams does not specifically disclose a microprocessor that determines peak volume levels in both speech paths.

Karnowski et al. disclose a software speakerphone that comprises a microprocessor 160 which performs level detection and/or attenuation under software control. Microprocessor 160 performs attenuation in software by multiplying one of the digitized audio signals by an attenuation constant and level peak detection is accomplished by software (see: col. 5, lines 8-11). Karnowski et al. further disclose microprocessor 160 which continuously monitor audio signal and determine the peak level through software means (see: col. 7, lines 47-49). Note that Odhams does detect gain levels via C10 and C12, but does not state what statistic he uses to gauge signal level. The microprocessor by software means can measure average level, or RMS level or peak level. Since Odhams does not state which one to use, one of ordinary skill of the art would have been motivated to examine similar art for teachings of how to measure gain signal levels. Karnowski teaches one to use peak levels. It would have been obvious to utilize the teachings of Karnowski i.e.

peak detection in Odhams in order to supply the needed function of signal level detection using a type of measurement well known in the art.

Regarding claims 2 and 4, as discussed above, they are rejected for the reasons set forth for claim 1. Furthermore, Odhams in view of Karnowski et al. shows a preamplifier A2 coupled to the microprocessor 160, and also determines peak volume levels in both speech paths and adjusts attenuators AT3, AT7. The microprocessor 160 is an integrated circuit controller that inherently includes a codec. Fig. 1 shows a telephone line interface.

Regarding claim 7, as discussed above, it is rejected for the reasons set forth for claim 1. Furthermore, Odhams in view of Karnowski et al. discloses microprocessor 160 which directs the reading of the hands-free registers (microphone 150 and loudspeaker 152), and determining the peak volume levels of both speech paths; and digitally adjust the microphone and speaker gains in relation to the peak volume levels (microprocessor 160 performs level detection and/or attenuation under software control and attenuation is performed in software by multiplying one of the digitized audio signals by an attenuation constant and level peak detection is accomplished by software (see: col. 5, lines 8-11); microprocessor

160 continuously monitor audio signal and determine the peak level through software means (see: col. 7, lines 47-49).

Regarding claims 8-9, Karnowski et al. discloses microprocessor 160 which is controlled by a software timer and peak detection.

Regarding claim 20, as discussed above, it is rejected for the reasons set forth for claim 1. Furthermore, in the above combination, Karnowski et al. discloses microprocessor 160 which monitors said audio information signal to determine a peak signal level for said audio information signal, comparator C22, compares said peak signal level to said stored noise threshold information and adjusts the amplitude of said audio information signal when said amplitude is greater than said noise threshold information.

Regarding claim 21, Odhams in view of Karnowski et al. disclose microphone 1 which is an audio register having information representing said peak signal level of said audio information signal.

Regarding claim 22, Odhams in view of Karnowski et al. discloses microprocessor 160 which uses an algorithm for accomplishing steps of monitoring, comparing and adjusting.

Regarding claim 23, Odhams in view of Karnowski et al. discloses digital attenuators AT3 and AT7 which is controlled by microprocessor 160 to adjust the amplitude of the audio information signal.

Regarding claim 24, as discussed above, it is rejected for the reasons set forth for claim 1. Furthermore, the logic decision circuit is met in Odhams in view of Karnowski et al. as microprocessor 160.

Regarding claim 25, Odhams in view of Karnowski et al. discloses a microprocessor 160

Regarding claim 26, Odhams in view of Karnowski et al. shows in Fig. 1 microprocessor 160 that is configured and arranged to regulate the balance of the speech paths during full duplex communication.

Regarding claim 27, Odhams in view of Karnowski et al. shows microprocessor 160 that is further adapted to implement gain control and regulate gain proportions along at least one of the two speech paths.

Regarding claim 28, Odhams in view of Karnowski et al. shows microprocessor 160 that is further adapted to implement gain control and regulate gain proportions along both speech paths.

Regarding claims 29-30, 31, 33 and 34, Odhams in view of Karnowski et al. teaches if a speech signal is detected in one channel and not in the other, or if a speech signal in one channel has an amplitude which is larger by at least preset threshold than the speech signal in the other channel, the attenuators are so adjusted that the value of the attenuation in said one channel is decreased in a step-wise manner while the value of the attenuation in the other channel is increased in a step-wise manner (see: Odhams, page 1, lines 31-34).

Regarding claims 32 and 37, Odhams in view of Karnowski et al.discloses hysteresis in the comparison between transmit and receive audio signal levels to determine a speakerphone mode. The use of hysteresis prevents the rapid oscillation between transmit and receive modes when the transmit audio signal level and receive signal levels are very close to one another. Hysteresis calculations are performed in software generally. See: col. 5, lines 23-30.

Regarding claim 35, as discussed above, it is rejected for the reasons set forth for claim 1.

Regarding claim 36, as discussed above, it is rejected for the reasons set forth for claim 7.

Response to Arguments

6. Applicant's arguments with respect to claims 1-2, 4 7-9 and 20-36 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sacca (US Patent 5,692,042) discloses speakerphone controlled by a comparator with hysteresis.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory

action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M. Saint-Surin whose telephone number is (703) 305-4760. The examiner can normally be reached on Mondays through Thursdays from 8:30 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen, can be reached on (703) 305-4386. The fax phone number for this Group is (703) 308-5403.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Any response to this final action should be mailed to:

Box AF

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Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

(703) 305-3900 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

FORESTER W. ISEN
PRIMARY EXAMINER
ART UNIT 2747

JACQUES SAINT-SURIN
PATENT EXAMINER

Jacques M. Saint-Surin
December 19, 1998